E27 It's Rapid, But Is It Relevant? Balancing Speed and Evidentiary Significance in the Coming Age of Real-Time DNA Analysis

Ted R. Hunt, JD, Jackson County Courthouse, 415 E 12th Street, Fl 7M, Kansas City, MO 64106*

After attending this presentation, attendees will understand why test results obtained from rapid DNA technologies must not significantly outpace investigative information about the items from which those results are obtained. It is critical that police agencies quickly discover, document, and disseminate information about such items to establish their relevance as evidence. Only then can rapid testing technologies truly benefit law enforcement in the coming age of real-time DNA analysis.

This presentation will impact the forensic science community by explaining why rapid DNA results will be but a single component of a tested item's evidentiary significance. It will also explain why such results are meaningless absent investigative information that builds a contextual framework around a rapidly produced profile. This factual context, in turn, animates evidence with varying degrees of logical relevance. Accordingly, the rapid DNA revolution will never be fully realized without concurrently improving the timely collection and transmission of item-specific information to essential investigative assets. Only then will the right evidence be tested, providing real-time results with real-time relevance.

Physical evidence is composed of three separate elements: (1) the relative degree of significance inferred from an item's contextual surroundings at a crime scene; (2) what those in a position to know — witness(es), victim(s), or suspect(s) — *say* (or do not say) *about it*; and, (3) the forensic testing results, conclusions, and weight (quantitative or qualitative) of a match or association to that item.

These three elements correlate with the work performed by three types of investigative assets employed by most police agencies — crime scene investigators (element 1); detectives (element 2); and, forensic scientists (element 3).

Differences in expertise, specialization, and division of labor necessarily require these investigative assets to simultaneously work on different aspects of the same case, gathering information about crime scene evidence from multiple sources and locations. As a result, information about physical evidence is not routinely shared — in real-time — among these assets as it is acquired. Accordingly, crime scene investigators may collect numerous items for DNA analysis before a factual nexus between those items and the case has been established. Alternatively, scene investigators may fail to collect items that ostensibly appear to be insignificant. In reality; however, they may have a direct association with critical, but then, unknown, case facts.

Detectives are normally responsible for interviewing victims, witnesses, and criminal suspects. Typically; however, these individuals are promptly removed from the scene and taken to a separate location to be treated or interviewed. Consequently, interviewing detectives may never enter the crime scene and thus remain unaware of the nature and significance of the physical evidence it contains. Furthermore, in an effort to quickly develop a lead and make an arrest, detectives are likely to focus on questions concerning "whodunnit" rather than "howdunnit." As a result, they may fail to acquire critical information about the relative significance of specific crime scene items from persons with such knowledge.

Forensic scientists receive evidence analysis requests from detectives who may seek DNA testing of one or more (and possibly dozens of) submitted items. In complex investigations; however, detectives may have little, if any, information about *why* crime scene investigators collected certain items or samples, *how* they relate to the case, and *when* they were deposited at the scene. Furthermore, in the haste to develop a rapid genetic profile, DNA analysts may bypass preliminary serological testing that would further deprive a detected profile of contextual significance.

As a result of these investigative disconnects, the relevance of rapidly produced profiles may be uncertain in many cases. Therefore, coordination and communication regarding physical evidence must be greatly enhanced to meet the coming age of real-time DNA analysis. This can be accomplished in a number of ways.

First, crime scene investigators, while still at the scene, must communicate with detectives and share specific information about the presence and nature of potential items of evidence. This may generate further investigative questioning by detectives. Additional questioning may, in turn, lead to the identification, collection, and/or processing of additional relevant items by scene investigators.

Second, in addition to questions focused on suspect development, detectives must begin to routinely ask victims and witnesses about which particular items or samples at a scene may be significant to the investigation, and why that is the case.

Third, relevant interview information, whenever possible, should be relayed by detectives, in real-time, to crime scene investigators. This will allow them to identify, collect, and/or process items that may

otherwise appear to be insignificant or unremarkable.

Fourth, crime scenes should *not* be released until *after* detectives have acquired all necessary information from victims, witnesses, and suspects about potentially relevant items of physical evidence.

Fifth, item-specific information must be collated, documented, and disseminated by investigators to DNA analysts who can determine if serological testing is advisable, given the nature and context of the sample. Furthermore, when more than one item is submitted, analysts, case detectives, and prosecutors must collectively make reasoned judgments about testing prioritization based on each sample's potential for successful DNA analysis and its relative degree of probative value.

In summary, the results obtained from rapid DNA testing are but a single element in the tripartite analysis of evidentiary relevance. Test results that outpace law enforcement's acquisition and dissemination of basic information about questioned crime scene items are not fully useful. In such cases, law enforcement merely has a profile waiting on a personality. Therefore, in addition to profile speed, it is essential to achieve *rapid relevance* for real-time results.

Rapid DNA, Relevance, Evidence

 ** Presenting Author*